CENTER/RC TING SLIP

FROM	DATE
T5SG/ESD/TEB	4 Sep 69

TO	INITIALS	DATE	REMARKS
DIRECTOR			
DEP/DIRECTOR			
EXEC/DIRECTOR			
SPECIAL ASST			
ASST TO DIR			
ASST TO DEP/DIR			
CH/PPBS			
DEP CH/PPBS			
EO/PPBS			
CH/IEG			
DEP CH/IEG			
EO/IEG			
CH/PSG			
DEP CH/PSG			
EO/PSG			
~~CH~~/TSSG	RED XX		
DEP CH/TSSG			
EO/TSSG			
CH/SSD/TSSG			
PERSONNEL			
LOGISTICS			
TRAINING			
RECORDS MGT			
SECURITY			
FINANCE			
DIR/IAS/DDI			
CH/DIAXX-4			
CH/DIAAP-9			
CH/SPAD			

[redacted]

for info
tion.

25X1

Declass Review by NIMA/DOD

IP FM 30 (11-68) - OBSOLETE PREVIOUS EDITIONS

CONFIDENTIAL

TSSG/ESD/TEB-18/69
3 September 1969

MEMORANDUM FOR: Chief, Research & Engineering Division, TSSG

ATTENTION : [redacted] 25X1

THROUGH : Chief, TEB/ESD
Chief, ESD/TSSG 4Sep69

SUBJECT : Memorandum Test Report on Advanced 918 Light Table [redacted] 25X1

1. Reworked (Mod. 1) table was received from manufacturer on 20 August. Acceptance test and evaluation was conducted using new specifications given to Ch/WCPO by the contract monitor dated 11 July 1969 as a test guide.

2. Contractor has complied satisfactorily with correction requirements (a), (b), (c) and (d). Two handwheels now exist outboard in place of the former three handwheels.

3. The squeal (item (e)) in the left motor has not been eliminated. This noise is extremely bothersome. TEB considers this condition unacceptable.

4. The table continues to have electrical leakage believed to be caused by induced voltages. The table metal surface was shorted to ground through a 100 ohm resistor (near short circuit) and the voltage drop was measured across the resistor. The current was calculated as approximately 0.5 ma. [redacted] the project monitor, stated that the contractor has informed him that the leakage is caused by induced transformer voltage and the current level is not dangerous. Considering the 0.5 ma measurement, the limits for safety stated in the [redacted] Design Guide (2.5 peak milliamperes) and the contractor's statement; the table is presently considered electrically safe for operation. 25X1 25X1

5. The illumination system now produces 2200 foot lamberts in the center, a minimum of 1840 foot lamberts in the innermost $7\frac{1}{2}$ by 16 inch area and also a minimum of 1840 foot lamberts along

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the edge. This gives a maximum brightness gradient of 16.5% which is close enough to the required 15% to be acceptable. Although the table's illumination source now meets the requirements of paragraph 1, the illuminated area is blotchy in appearance due to areas of non-uniformity which were not detectable with the light measuring sensor.

6. It is the opinion of TEB that the Advanced 918 Light Table should be rejected for the second time due to the contractors failure to correct the objectionable motor squeal. This may not be difficult to correct since it is a brush commutator type motor and the brushes probably create the noise.

[redacted] 25X1

TEB/ESD

Distribution:
Orig. & 2 - NPIC/TSSG/ESD/TEB files
1 - NPIC/TSSG/RED (Project Officer)
1 - NPIC/TSSG/PPS (through Ch/TSSG)
1 - NPIC/IEG/OSS ([redacted]) 25X1
1 - DDI/IAS ([redacted]) 25X1
1 - DIAAP-9 ([redacted])
1 - Army/SPAD

☐ SECRET ☒ CONFIDENTIAL 02038 ☐ UNCLASSIFIED

CONTRACT INSPECTION REPORT

CONTRACT NO. | TASK NO.

25X1

TO:

DATE: 28 July 1969

INSPECTION REPORT NO. *(If final, so state)*: 5

ESTIMATED COMPLETION DATE

NAME OF CONTRACTOR

25X1

TYPE OF COMMODITY OR SERVICE

Advanced 918 Light Table

THE CONTRACTOR IS ON SCHEDULE ☐ YES ☒ NO

PER CENT OF WORK COMPLETED - 99%

PER CENT OF FUNDS EXPENDED - 99%

THE CONTRACTOR WILL PROBABLY REMAIN WITHIN ALLOCATED FUNDS ☒ YES ☐ NO IF ANSWER IS "NO" ADVISE RECOMMENDATION AND/OR ACTION OF SPONSORING OFFICE, ON REVERSE HEREOF. IF KNOWN, INDICATE MAGNITUDE OF ADDITIONAL FUNDS INVOLVED.

HAS AN INTERIM REPORT, FINAL REPORT, PROTOTYPE, OR OTHER END ITEM BEEN RECEIVED FROM THE CONTRACTOR DURING THE PERIOD? ☒ YES ☐ NO *(If yes, give details on reverse side.)*

HAS GOVERNMENT-OWNED PROPERTY BEEN DELIVERED TO CONTRACTOR DURING THIS PERIOD? ☐ YES ☐ NO *(If yes, indicate items, quantity, and cost on reverse side.)*

INCENTIVES

IS THIS AN INCENTIVE CONTRACT ☒ YES ☐ NO

IF YES, CHECK TYPE ☒ COST ☐ AWARD FEE ☐ PERFORMANCE ☐ DELIVERY

NOTE:
USE REVERSE SIDE FOR COMMENTS.
FINAL REPORT MUST CONTAIN INCENTIVE EVALUATION.

OVERALL PERFORMANCE OF CONTRACTOR

1. ☐ OUTSTANDING
2. ☐ EXCELLENT
3. ☐ VERY GOOD
4. ☐ ABOVE AVERAGE
5. ☒ AVERAGE
6. ☐ MINIMUM ACCEPTABLE
7. ☐ UNSATISFACTORY

IF OVERALL PERFORMANCE OF CONTRACTOR IS UNSATISFACTORY OR MINIMUM ACCEPTABLE INDICATE REASONS ON REVERSE SIDE.

RECOMMENDED ACTION

☒ CONTINUE AS PROGRAMMED

☐ WITHHOLD PAYMENT PENDING SATISFACTORY PERFORMANCE

☐ CLOSE OUT

☐ OTHER *(Specify)*

IF THIS IS A FINAL REPORT PUT COMMENTS ON REVERSE IN NARRATIVE FORM ON CONTRACTOR'S PERFORMANCE AND CERTIFY THAT ALL DELIVERABLE ITEMS UNDER THE CONTRACT HAVE BEEN RECEIVED. THESE INCLUDE, WHERE APPLICABLE, THE FOLLOWING:

ITEM	REC'D	DOES NOT APPLY	ITEM	REC'D	DOES NOT APPLY
PROTOTYPES	X		MANUALS	X	
DRAWINGS AND SPECIFICATIONS	X		FINAL REPORT	X	
PRODUCTION AND/OR OTHER END ITEMS		X	SPECIAL TOOLING		X
			OTHER GOVERNMENT PROPERTY		X

DATE OF LAST CONTACT WITH CONTRACTOR: 23 June 1969

SI

25X1

FORM 32-67 1387 PREVIOUS EDITION ☐ UNCLASSIFIED ☒ CONFIDENTIAL ☐ SECRET (12-36)

NARRATIVE REPORT ☒ INTERIM ☐ FINAL

The prototype light table was received from the Contractor on 16 April 1970. The table was subsequently tested and the following defeciencies were found:

(1) Illumination System - The specifications require the maximum illumination to exceed 2,000 foot lamberts. The table produces a maximum of 1870 foot lamberts at 117 volts. The illumination must not vary by more than 10% between any two points within the entire illuminated surface area according to the specifications. The [redacted] table varies by 20.5% (12.7% within an area excluding a one-inch boarder). The Contractor stated that the best way to meet the uniformity specifications was to increase the distance between the light grid and the diffuser. The specifications, however, require that the height of the table be kept to a minimum precluding this method of achieving uniformity. The Contractor consequently used an alternate approach to attempt to achieve uniformity. He manufactured a mask which would attenuate the intensity at the maximum points so that it would match the intensity at the minimum points. The test shows that this attempt was not a complete success.

(2) Manual Drive System - The Manual Drive System fails to meet the specifications in the area of ease of operation and film tension. The prototype table is inefficient. The mechanical efficiency of the system is approximately 20%, requiring that the operator use an excess amount of force to drive the film. Photo interpreters are used to exerting forces in a range of 1/2 to 1 pounds to drive film whereas with the prototype table, they are required to use 4-7 pounds of force. The range on the film tensioning system is such that at a minimum, enough force is still present to create oscilliations in the film movement creating slack loops and snapping the film. At the maximum setting as much as 20 pounds of force must be applied to the handle to overcome the tension and to move the film.

(3) Film Spool Loading and Holding Mechanism - According to the specifications each film spool shall be held in place by a pair of brackets. One fixed and one moveable with a positive quick release spindle on one bracket and a non-sliding spindle on the other. The quick-release spindle shall be the same as or equivalent to that found on the [redacted] Model 603 Light Table. The [redacted] Light Table provides a bracket assembly which at least in concept, is equivalent to the [redacted] assembly. Two improvements are suggested to make the [redacted] assembly a better working system. One would be an additional detent to allow the movable bracket to be locked all the way open. The other suggestion is to add a bumper so that the movable bracket cannot snap against the fixed bracket when it is released.

(4) Tilt Mechanism - Specifications require that the table be tilted to 75 degrees above the horizontal. The [redacted] table only tilts to 70 degrees above the horizontal. This deficiency does not appear to be significant.

(5) Noise Level - The specifications state that the noise level of the table measured at a distance of 5 feet from the table not exceed 5db above ambient on the c weighed scale nor 20db above ambient on the a weighed scale of a sound level meter such as a [redacted] type 1565-A. In the power film transport mode, the [redacted] table reaches 23db above ambient on the a weighed scale when transporting film to the right and 23db above ambient on the a weighed scale, and 8db above ambient on the c weighted scale when transporting film to the left. In the tilting mode the [redacted] table reaches 28db above ambient on the a weighted scale and 16db above ambient on the c weighted scale. In the manual transport mode the table reaches 28db above ambient on the a weighted scale and 11db above ambient on the c weighted scale. In addition, there appeared to be a high frequency squeal when the left motor is rotated counter clockwise. This squeal was in the range of 6,000 KHz. The Contractor believes this to be caused by a bad brush on a armature of the motor. In general the noise specs appear to be too stringent. The Contractor has already made one re-design in order to try and meet the noise specifications, and he still does not meet these. However, the noise generated by the table

does not appear to be objectionable with the exception the high frequency squeal.
(6) Dimensions and Weight - The [redacted] table exceeded the specified 25X1
length by 3 1/2 inches, the width by 3 1/2 inches, and the height by 1 3/4
25X1 inches. [redacted] found it impossbile to meet these specifications as
was stated in earlier reports. The table weight was also considerably above the
design goal of 60 pounds. Because of the requirements of the other specifications
for stability, power film transport, manual film transport, tilt mechanism, etc.
It was determined that it was impossible to meet the design goal and the final
weight of the table was 124 pounds.
(7) Safety Engineering - The specs require that the unit be grounded and be free
25X1 of all shock hazards. The [redacted] table is grounded however an electrical
potential of 45 volts exists between metal surface of the table and any ground if
the ground system is bypassed as when connecting the power cord to a two-wire
power service receiptal using an adapter connector.
25X1 (8) Reliability - The [redacted] table has been operated for approximately
50 hours. During this time, a low frequency knocking noise has developed in the
adjustable film support assembly on the left side of the table.

The Contractor has been advised of the deficiencies of his table. He has been requested to do the following:
(1) Take out the manual by-directional drive system. Add handwheels at the end of the motor shafts so that the power transport can be overridden. Remove the switches which are now unnecessary and put blanks in the resulting holes in the shell.
(2) Improve the illumination system by boosting the lamp intensity and improving the mask to provide more uniformity.
(3) Improve the film spool holding system by adding a detent to hold the film spool bracket all the way open and by adding bumpers to prevent the brackets from inadvertently snapping close and thereby damaging the spindles and possibly the motor.
(4) Remove the cause for the squeal in the motor.
(5) Eliminate the electrical leaks causing the potential between the shell of the light table and ground.
(6) Remove the cause of the knocking noise developed in the adjustable film support assembly on the left side of the table.

Other deficiencies not corrected by the aftermentioned tasks will have to be lived with since there seems to be no acceptable solution to the problems. The light table is being returned to [redacted] to have the modifications made 25X1

During the last reporting period, the manuals, drawings, and final report were received as well as the prototype. The prototype was returned, however. This contract is a fixed price incentive contract which will probably reach the
25X1 ceiling cost of [redacted]